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Anxious Solitude and Self-Compassion and Self-Criticism Trajectories in Early Adolescence: Attachment Security as a Moderator

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Youths' attachment representations with their parents were tested as moderators of the relation between peer-reported anxious solitude and self-compassion and self-criticism trajectories from fifth to seventh grades. Participants were 213 youth, 57% girls, $M = 10.65$ years of age. Growth curves revealed that attachment representations with both parents moderated the relation between AS and self-processes such that AS youth with (a) dual secure attachments demonstrated the most adaptive self-processes, (b) one secure attachment demonstrated intermediately adaptive self-processes, and (c) dual insecure attachments demonstrated the least adaptive self-processes over time. AS youth with dual insecure attachments are of most concern because they demonstrated elevated and increasing self-criticism over time, given evidence for relations between self-criticism and internalizing psychopathology.

When young people experience emotional distress, difficult situations, or do not perform well, they can be self-compassionate or self-critical. Youth are self-compassionate when they are kind to themselves, recognize that others experience similar difficulties (e.g., "Everyone has trouble making friends sometimes"), and acknowledge their negative feelings and thoughts without intensifying them; and, conversely, engage in self-critical egocentrism and rumination when they judge themselves harshly, think that their difficulties are unique (e.g., "I'm the only kid who has trouble making friends") and focus on their negative thoughts and feelings in a manner that intensifies them (Neff, 2003). These self-processes have implications for youths' emotional functioning. High self-criticism predicts depression in both youth and adults (Abela & Hankin, 2008; Abela, Sakellaropoulou, & Taxel, 2007; Blatt, Quinlan, Chevron, McDonald, & Zuroff, 1982; Coyne & Whiffen, 1995; Gilbert, McEwan, Catarino,

& Baião, 2014; Zuroff, Koestner, & Powers, 1994; Zuroff, Moskowitz, Wielgus, Powers, & Franko, 1983). Conversely, self-compassion buffers adults from anxiety and depression (Neff, Kirkpatrick, & Rude, 2007; Neff & Vonk, 2009). However, self-compassion has only recently become a focus of research attention in youth (Bluth & Blanton, 2014; Neff & McGehee, 2010). In this study, we investigate the origins of self-compassion and self-criticism in youth who are at risk for internalizing problems due to their anxious solitary (AS) affective-behavioral profile (Gazelle & Rudolph, 2004). Specifically, we investigate the influence of AS youths' representations of attachment security with their parents on continuity and change in self-compassion and self-criticism over time.

Attachment and Self-Processes

According to attachment theory, the core function of attachment relationships is to provide

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children comfort during times of distress (Ainsworth, 1979; Bowlby, 1969). Securely attached children are confident that their caregiver will be available and responsive if they become distressed and therefore feel confident exploring their world (Benoit, 2004; Waters & Cummings, 2000). Conversely, insecurely attached children are uncertain about their caregiver's availability and responsiveness during times of distress and therefore feel less confident and anxious about exploring their world.

Based on attachment relationships, children develop an "internal working model" or cognitive representation of interpersonal relationships. This model guides not only children's expectations of relationship partners but also their views of themselves in relation to others (Bowlby, 1969; Cassidy, 1988). Based on experiencing consistent responsive care, securely attached children view themselves as worthy of love and care. In contrast, based on experiencing poor or inconsistent care, insecurely attached children see themselves as unworthy of love and care or worthy only under certain circumstances (e.g., if they perform well or prove their worth). Therefore, when youth with secure attachments to parents do not perform well or are distressed, their worthiness is not threatened, and they may be able to be kind to themselves (e.g., "When I find the right person it will be easier to become friends"; Cunha, Martinho, Xavier, & Espirito-Santo, 2014; Neff & McGehee, 2010; Wei, Liao, Ku, & Shaffer, 2011). Conversely, when youth with insecure attachments to parents do not perform well or are distressed, they may see their worthiness as in question and be self-critical to avoid a repeat performance (e.g., "I've got to be more fun to make friends"; Irons, Gilbert, Baldwin, Baccus, & Palmer, 2006; Thompson & Zuroff, 1999).

Attachment and Self-Processes in Anxious Solitary Youth

This study focuses on a population particularly likely to have insecure attachments to parents and to be vulnerable to uncompassionate and critical self-processes: AS youth. AS youth want to engage with peers but often remain alone due to anxiety about how they may be treated by peers or perform with peers (Asendorpf, 1990; Gazelle & Ladd, 2003; Gazelle & Rudolph, 2004). This is manifested in shy, verbally inhibited, and reticent behavior: watching familiar peers without joining in or being unoccupied among familiar peers. Thus, anxious solitude is an affective-behavioral profile in which social anxiety is manifested in shy, hesitant, and solitary behaviors among familiar peers.

Anxious solitude fits under the umbrella term "social withdrawal," which refers to being alone at a high rate relative to peers for any reason. However, AS is distinct from being alone due to unsociability or lack of desire to engage with peers (Asendorpf, 1990; Spangler & Gazelle, 2009). Likewise, AS differs from behavioral inhibited temperament in which children fear the unfamiliar (Gazelle & Rubin, 2010).

AS youth are likely to have insecure representations of attachment to their parents. Evidence indicates that insecure ambivalent attachment predicts anxious solitude (Bohlin, Hagekull, & Rydell, 2000). Insecure ambivalent attachment is linked to inconsistent parenting in which the child sometimes encounters parental availability and responsiveness and sometimes does not. Consequently, the child is uncertain whether he or she is likely to be comforted when distressed. The child may cope with this uncertainty by attempting to draw links between his or her own behavior and his or her parents' response. The child may draw these links in order to try to gain a sense of control in the face of uncertainty, although this strategy may also result in the child feeling badly about him or herself when he or she is not successful in eliciting parental care. The child may feel that he or she is sometimes worthy of care and love and sometimes not. Consequently, he or she may carefully monitor and be critical of his or her behavior to try to prevent poor performance and distress. Consistent with this idea, AS youth have been found to exhibit high self-criticism and low self-compassion on average (Peter & Gazelle, 2016). Likewise, they may be vigilant for signs that their parents are not available or responsive to assess the likelihood that they will receive comfort if distressed.

However, it is also important to keep in mind that AS youth are likely to display heterogeneity in attachment security because anxious solitude is multiply determined. That is, there are a number of factors that predict the emergence, stability, and growth in anxious solitude over time, including not only insecure attachment (Bohlin et al., 2000; Brumariu & Kerns, 2008) but also behaviorally inhibited temperament (Kagan, Reznick, & Snidman, 1988) and peer exclusion (Booth-LaForce & Oxford, 2008; Booth-LaForce et al., 2012; Gazelle & Ladd, 2003; Gazelle & Rudolph, 2004), among other factors. Consequently, AS youth have insecure attachment representations on average, but individual AS youth vary in attachment security. This is because, for some youth, factors other than attachment security play a more prominent role in the development of anxious solitude.

We expect that AS youth with insecure attachment representations, relative to their counterparts

with secure attachments, to be particularly critical and uncompassionate toward themselves. When AS youth with insecure attachments encounter distress, they are likely to feel uncertain about whether their parents will be available and responsive. This uncertainty about parental care may be linked to feelings of being unworthy of love and care and result in self-criticism aimed at becoming worthy. Additionally, AS youth's feelings of unworthiness are likely to translate into anxiety in their peer relationships. Consequently, their peer relationships may be a source of distress, which in turn may exacerbate both their concerns about parental care in times of distress and self-criticism. Thus, a vicious circle may occur between AS youths' uncertainty about parental care in times of distress, distress in other relationships or realms of performance, feelings of unworthiness, and self-criticism and lack of self-compassion. This is expected to result in a statistical interaction in which attachment insecurity strengthens (moderates) the relation between youths' AS and their self-criticism and lack of self-compassion.

Multiple Attachments and Self-Processes

In this study we examine the impact of attachment security with both mothers and fathers on AS youths' self-processes. In general, we expect that secure attachment to both parents is the best support for optimal youth development (Main & Weston, 1981; Verschueren & Marcoen, 1999), secure attachment to one of two parents is intermediate, and insecure attachment to both parents is the worst scenario. Youth with dual secure attachments are metaphorically most likely to have two feet firmly planted in the ground in that they only have secure attachments representations available, and they have two options for support in times of distress. In contrast, youth with one secure and one insecure attachment metaphorically are standing on one leg—they do not have as firm a base for support in comparison to children with two secure attachments. They have both secure and insecure relationship models available to them and only one parent on whom to rely for support in times of distress. They may therefore approach the world with the awareness that some people can be trusted for support, whereas others cannot, and perhaps therefore find forming positive trusting relationships somewhat more challenging. This mixed representation of key relationships could translate into an internal working model that supports mixed adaptive and maladaptive self-processes or moderate levels of

self-compassion and self-criticism. Finally, children with insecure attachments to both parents metaphorically have no leg to stand on. They lack both a secure relationship model to draw on and parents to count on for support in times of distress. In order to form healthy relationships in their lives, they must create something that they have not previously experienced. We expect this scenario to foster the worst self-processes because youth may view themselves as unworthy of love and care.

Hypotheses could also be advanced about the influence of multiple attachments based on greater influence of the primary caregiver or the unique role of mothers or fathers (Parke & Buriel, 2006). Although finding differential maternal and paternal effects is not uncommon, reliable patterns are often not apparent across studies, and we did not feel that there was a compelling rationale to support such expectations in predicting self-process trajectories. Additionally, some children have contact with only one parent or other caregiver. We would generally expect secure attachment to one parent to have intermediate positive effects in the absence of another parental attachment figure. Although the child might have only a positive and no negative attachment representations, he or she may have a sense that the other parent is unavailable and would have only one parent to rely on for support in times of distress.

The Early Adolescent Period

The early adolescent period is an opportune time to study youths' self-processes because they encounter new interpersonal and performance challenges as parents allow them increasing autonomy and they make the transition to secondary school (Rudolph, Lambert, Clark, & Kurlakowsky, 2001). Youths' self-processes may be strongly influenced by the continuing responsiveness of parents to the distress youth encounter during this time.

The Present Study

In the present study, we test attachment security as a moderator of the relation between anxious solitude and self-process trajectories from fifth through seventh grades, with separate models for self-compassion and self-criticism trajectories. The main and joint effects of youths' attachment representations with both mothers and fathers and level of anxious solitude are included in each model. Consistent with the general principles of multiple attachments, we articulated above, we expected youth high in anxious

solitude with two secure attachments to parents to display the most self-compassion and least self-criticism over time, youth high in anxious solitude with one secure attachment to demonstrate intermediate levels of self-compassion and self-criticism over time, and youth high in anxious solitude with two insecure attachments to display the least self-compassion and most self-criticism over time. Beyond this ordering of self-processes, we would expect a pattern of change (increasing or decreasing self-processes relative to mean patterns) over time to be most likely for the most extreme cases, that is, youth high in anxious solitude with two secure or two insecure attachments. For example, we would expect an increasing pattern of self-criticism to be most likely for AS youth with two insecure attachments. Escalating youth maladjustment may occur if parents are not responsive to the distress that AS youth may experience if they struggle to adapt to increased interpersonal challenges, autonomy, and performance demands in the early adolescent period.

Method

Participants and Procedures

Participants were 213 youth attending public schools in a suburban to rural region of the Southeastern United States. They were youth with adequate data for growth curves in fifth to seventh grades from those selected into the longitudinal sample ($n = 230$, $213/230 = 93\%$ of the longitudinal sample) from a larger screening sample of 688 youth in the third grade and followed through seventh grade. This report focuses on fifth through seventh grades because self-compassion and self-criticism data were collected at these times.

Approximately half of the youth in the longitudinal sample scored at or above $+1 SD$ in peer-reported AS relative to the larger screening sample in third grade or subsequent time points, and the other half was a normative comparison sample who scored below $+1 SD$ on peer-reported AS (thus preserving the full AS distribution) and were demographically matched (for age, gender, socioeconomic status [SES], ethnicity, and initial classroom). The longitudinal sample was gender balanced (57% girls, $n = 130$, $\chi^2 = 4.45$, *ns*).

Youth selected versus nonselected for the longitudinal study did not significantly differ at the third grade outset of the study in age (longitudinal $M = 8.68$ years, $SD = 0.50$; nonselected $M = 8.65$ years, $SD = 0.48$; $t = -.73$, *ns*) or SES (free or reduced lunch status: longitudinal 30%, nonselected

30%; $\chi^2 = 1.54$, *ns*). However, girls were overrepresented in the longitudinal sample (57% in the longitudinal sample versus 49% in the nonselected sample, $\chi^2 = 4.41$, $p < .05$). This is consistent with evidence for higher prevalence of anxious solitude in girls relative to boys in some later childhood and adolescent samples (Rubin, Wojslawowicz, Rose-Krasnor, Booth-LaForce, & Burgess, 2006). Although the screening and longitudinal samples were ethnically diverse and representative of the region (62% vs. 60% European American, 22% vs. 16% African American, 13% vs. 23% Latino, and 2% vs. 1% Asian American, respectively), significant differences emerged in the representation of two ethnic groups ($\chi^2 = 13.51$, $p < .01$) in the screening relative to the longitudinal sample. There were more Latinos (23% vs. 13%, $p < .05$) and fewer African Americans (16% vs. 22%, $p < .05$) in the longitudinal sample relative to the screening sample due to the prevalence of anxious solitude in these groups.

Youth's reports of self-compassion and self-criticism were collected each fall in fifth through seventh grades only, youth's representations of parent-child attachment (to mothers and fathers) were collected each fall in third through seventh grades, and self- and peer reports of anxious solitude were collected in both the fall and spring in third through seventh grades. Therefore, anxious solitude data (both self- and peer-reported data) from each fall (but not each spring) in fifth through seventh grades are analyzed so that all elements of data were collected concurrently at each annual assessment. These data collection points were separated approximately by 1 year. See Table 1 for sample size and intercorrelations across time by time point and measure. Stability *rs* are listed under each measure description below.

Of the 230 longitudinal participants, data were available for 86%–93% of youth in fifth grade; and retention rates of 75%–85% were achieved in sixth grade after the transition to middle school, and 71%–76% in seventh grade (Table 1). Little's MCAR test indicated data were missing completely at random across the 3 years: $\chi^2(580) = 602.73$, *ns*. Of participants, 213 (93%) had sufficient data for growth curves.

Self-report measures were administered by research assistants who read questionnaires aloud to groups of five or fewer youth in a quiet area of their school while youth marked their responses on individual questionnaires. Peer nominations were administered by research assistants who read questions aloud to each classroom while youth marked their responses by selecting their classmates' names

Table 1
Intercorrelations Among All Variables From Fifth Through Seventh Grades

	n (%)	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	
Fifth grade																			
1. AS (self-reports)	198 (86)	1.00																	
2. AS (peer reports)	203 (88)	.27**	1.00																
3. Security (mom)	209 (91)	-.14	.07	1.00															
4. Security (dad)	204 (89)	-.06	.07	.51**	1.00														
5. Self-compassion	214 (93)	.01	-.03	.32**	.34**	1.00													
6. Self-criticism	214 (93)	.29**	.10	-.14	-.08	.09	1.00												
Sixth grade																			
1. AS (self-reports)	184 (80)	.31**	.08	-.16	-.17	-.09	.22**	1.00											
2. AS (peer reports)	184 (80)	.06	.61**	.06	.04	-.10	.05	.19*	1.00										
3. Security (mom)	180 (78)	.03	.15	.50**	.30**	.12	-.22**	-.17*	.12	1.00									
4. Security (dad)	173 (75)	-.15	.10	.37**	.49*	.07	-.30**	-.18*	.13	.55**	1.00								
5. Self-compassion	196 (85)	.14	.15*	.25**	.26**	.38**	-.06	.16*	.19*	.12	.17*	1.00							
6. Self-criticism	196 (85)	.40**	.05	-.17	-.09	-.001	.48**	.37**	-.05	-.29**	-.21**	.34**	1.00						
Seventh grade																			
1. AS (self-reports)	167 (73)	.43**	.23**	-.31	-.15	-.16	.19*	.51**	.32**	-.15	-.13	.07	.29**	1.00					
2. AS (peer reports)	164 (71)	.09	.57**	-.03	-.02	-.09	.07	.24**	.83**	.04	.07	.20*	-.02	.34**	1.00				
3. Security (mom)	169 (74)	-.04	.002	.35**	.30**	.21**	-.23**	-.14	-.04	.49**	.40**	.23**	-.22**	-.23**	1.00				
4. Security (dad)	164 (71)	-.07	.03	.33**	.38**	.15	-.14	-.13	.03	.36**	.65**	.24**	-.15	-.15	.01	1.00			
5. Self-compassion	174 (76)	.25**	.12	.08	.10	.24**	.001	.17*	.13	.14	.13	.56**	.18*	.21**	.12	.22**	1.00		
6. Self-criticism	174 (76)	.30**	.04	-.30	-.26	-.06	.37**	.43**	-.01	-.33**	-.33**	.08	.48**	.50**	.08	-.24**	-.24**	1.00	

Note. N = 164-214. Significant correlations appear in bold. % = percent of total longitudinal sample (N = 230). AS = anxious solitude. *p < .05 (two-tailed). **p < .01 (two-tailed).

on their individual class rosters. Unlimited and cross-sex nominations were allowed because they produce better psychometric properties than alternative approaches (Terry & Coie, 1991).

Measures

Peer-Reported Anxious Solitude

Peers nominated their classmates for items describing AS affect and behavior. The anxious solitude composite was calculated as the mean of three peer nominations: "children who . . ." (a) ". . . act really shy around other kids. They seem to be nervous or afraid to be around other kids and they don't talk much. They often play alone at recess and work alone most of the time. They seem to be afraid to be around other kids"; (b) "watch what other kids are doing but don't join in. At recess they watch other kids playing but they play by themselves (at lunch they watch other kids talking but don't join into the conversation)"; and (c) "are very quiet. They don't have much to say to other kids." The phrasing displayed in parentheses was used in sixth and seventh grades to achieve developmental appropriateness when youth no longer had recess. The composite ($M_s = .21-.36$, $SD_s = 1.14-1.49$) demonstrated high internal reliability ($\alpha_s = .89-.97$) and moderate to high stability ($r_s = .62-.97$, $p_s < .001$; Table 1) over successive time points.

Self-Reported Anxious Solitude

Anxious solitude was also assessed by youth self-reports on the *Motivation for Solitude and Sociability Scale* (Gazelle, 2005). The anxious solitude subscale consisted of seven items. The items were "I want to play with other kids but I'm too shy or afraid to play with them," "I am lonely I wish I could play with other kids," "I worry about what other kids think of me," "I feel that I'm not myself around the other kids," "I'm more shy and quiet than the other kids and talk less than they do," "I'm afraid I will embarrass myself around other kids," and "I feel nervous with other kids and more relaxed when I'm alone." Response options ranged from 0 to 3 (0 = *never*, 1 = *sometimes*, 2 = *a lot*, 3 = *always*). The mean was computed for the anxious solitude composite at each time point ($M_s = .70-.85$, $SD_s = 1.83-2.67$). Higher scores indicated higher levels of anxious solitude. Anxious solitude demonstrated acceptable internal reliability ($\alpha_s = .78-.84$) and moderate stability in consecutive

years from fifth to seventh grades ($r_s = .52-.53$, $p_s < .001$; Table 1). Self- and peer-reported anxious solitude demonstrated mild to moderate concurrent convergent validity over time ($r_s = .20-.34$, $p_s < .01$; Table 1).

Youths' Representations of Attachment Security With Parents

In later middle childhood and early adolescence, it is no longer developmentally appropriate to assess attachment security behaviorally with a series of separations and reunions as in the *strange situation* (Ainsworth, 1979). Therefore, youth reported on their representations of attachment security with parents on separate maternal and paternal versions of the *security scale* (Kerns, Klepac, & Cole, 1996). This scale yields a continuous attachment security score, but does not distinguish between types of insecure attachment (i.e., ambivalent vs. avoidant). The security scale assesses attachment from the youth's perspective, indicating the degree to which the youth believes their parent to be responsive and available, their tendency to rely upon their parent when distressed, and ease of communication with their parent. The scale consisted of 15 items (e.g., "Some kids find it easy to trust their mom [dad] BUT other kids are not sure if they can trust their mom [dad].") Youth indicate whether the statement is really true for them or sort of true for them on a 4-point scale (1-4). Seven negatively phrased items were reverse scored before a security composite was calculated as the mean of all 15 items. Therefore, higher scores indicate higher attachment security. The scales displayed good internal reliability at all time points (mother-child attachment $\alpha_s = .76-.86$; father-child attachment $\alpha_s = .82-.88$) and moderate stability at successive time points (mother-child $r_s = .42-.50$, $p_s < .01$; father-child $r_s = .47-.65$, $p_s < .01$; Table 1). Youths' representations of attachment security with their mothers versus fathers were positively correlated at concurrent time points ($r_s = .51-.67$, $p_s < .01$; Table 1).

Self-Compassion and Self-Criticism

Youth reported on self-compassion and self-criticism on the *Self-Compassion Scale for Children* (SCSC; Neff & Saltzman, 2005), adapted from the adult *self-compassion scale* (Neff, 2003). The SCSC prompts youth to rate how they treat themselves when they experience negative emotions or situations or perform poorly. The stems of 11 items (42% of items) refer to negative self-evaluations of

performance (e.g., “When” . . . “I feel I’m not good enough,” “I think about things I don’t do well,” “I fail at something important to me”), whereas the stems of the remaining 15 items (58% of items) refer to general negative emotions or situations that may or may not involve self-evaluation of performance (e.g., “When” . . . “I’m feeling bad,” “something upsets me,” “I’m having a hard time”). The SCSC consists of 26 items with six subscales. Three subscales with a total of 13 items index *self-compassion*: (a) *self-kindness* (α s = .75–.80; e.g., “I try to treat myself well when I am feeling bad”), (b) *common humanity* (α s = .77–.84; e.g., “When I am feeling bad, I remind myself that lots of other people have these feelings too”), (c) *mindfulness* (α s = .67–.72; e.g., “When something upsets me I try to notice my feelings but not let them get too strong”). The three remaining subscales with a total of 13 items index *self-critical egocentrism and rumination*, which we henceforth refer to as *self-criticism* for the sake of brevity: (d) *self-judgment* (α s = .76–.89; e.g., “I am unkind to myself when I am not good enough”), (e) *isolation* (α s = .70–.82; e.g., “When I fail at something important to me, I feel like everyone else is better than me”), and (f) *overidentification* (α s = .73–.79; e.g., “When I am feeling bad I tend to focus on and worry about everything that is wrong”). Each item was rated on a 5-point scale (1 = *almost never*, 2 = *a little*, 3 = *sometimes*, 4 = *a lot*, 5 = *almost always*).

Confirmatory factor analysis revealed that a two-factor model with self-compassion and self-criticism factors exhibited better fit in fifth, sixth, and seventh grades (Hu & Bentler, 1999; comparative fit index [CFI] = .96, .94, .93; Tucker–Lewis index [TLI] = .90, .88, .87; standardized root mean square residual [SRMR] = .06, .09, .09; factor loadings on expected latent constructs λ s = .77–.90, .79–.90, .77–.96, r between the two factors = .18, .46, .41), compared to a one-factor model with all items contributing to self-compassion (items in the three negative composites were reverse scored; CFI = .61, .57, .68; TLI = .34, .47, .28; SRMR = .26, .32, .28; factor loadings on latent construct λ s = .48–.84, .51–.91, .43–.89). Similarly, others have found that the same two- versus one-factor solution to the adult version of the SCSC results in better fit (Costa, Marôco, Pinto-Gouveia, Ferreira, & Castilho, 2015; López et al., 2015; Neff, 2003; for a discussion, see Muris, 2016; Muris, Otgaar, & Petrocchi, 2016; Neff, 2016a, 2016b). Also, the positive components (self-kindness, common humanity, mindfulness) were highly intercorrelated (r s = .60–.71, p s < .001), as were the negative components (self-judgment, isolation, overidentification;

r s = .67–.72, p s < .001). Consequently, the positive items were combined into a *self-compassion* composite (α s = .88–.90), and the negative items were combined into a *self-criticism* composite (α s = .86–.94). Thus, higher scores reflect higher self-compassion or self-criticism, respectively. These two composites were uncorrelated to moderately positively correlated at concurrent time points over time (r s = .09 *ns*–.34, p < .01; Table 1). Stability coefficients were moderate over consecutive 1-year intervals for both self-compassion (r s = .38–.56, p s < .001) and self-criticism (r s = .48, p s < .001; Table 1).

Results

Analytic Overview

Growth curve models were estimated using hierarchical linear modeling (HLM 6.08; Bryk & Raudenbush, 1992; Raudenbush & Bryk, 2002) to test the main and joint effects of anxious solitude and youth’s representations of attachment with both their parents in predicting self-compassion and self-criticism trajectories from fifth through seventh grades. Predictors were standardized at each time point prior to computing interaction terms. To justify testing these predictors, in preliminary analyses, unconditional models were tested to examine whether there was significant individual variation around the mean trajectory, which could become the focus of prediction efforts.

Unconditional models were computed with linear and quadratic time as Level 1 predictors in separate self-compassion and self-criticism growth curve analyses. Linear time was coded as 0, 1, and 2; and quadratic time as 0, 1, and 4 for fifth, sixth, and seventh grades, respectively. In each model, both time terms were retained as fixed effects (even when nonsignificant) to most accurately characterize the mean trajectory, but only significant time terms were retained as random effects to capture the degree of individual variation from the mean trajectory over time (see Table 2).

Subsequently, conditional growth models were computed to test additional time-varying covariates (anxious solitude, youths’ representations of attachment security with mothers and fathers, interaction effects) as predictors of individual variation at the intercept and in linear change in self-compassion and self-criticism over time. Separate models were computed with peer- and self-reported anxious solitude to reinforce confidence in findings across informants. These models were broadly consistent with one another. Therefore, in the interest of space, we

Table 2
Unconditional Self-Compassion and Self-Criticism Trajectories From Fifth Through Seventh Grades

Fixed effect	Self-compassion trajectory				Self-criticism trajectory			
	Coefficient	SE	df	t	Coefficient	SE	df	t
Initial status, π_0								
Mean initial status, β_{00}	2.68	.06	224	46.24***	1.93	.05	224	40.96***
Linear time, π_1								
Mean linear change rate, β_{10}	-0.30	.11	224	-2.68***	-0.15	.09	224	-1.65
Quadratic time, π_2								
Mean quadratic change rate, β_{20}	0.10	.05	133	2.00***	0.05	.05	133	1.09
Random effect	SD	Variance	df	χ^2	SD	Variance	df	χ^2
Initial status, r_0	.63	.40	201	462.75***	.50	.25	201	448.88***
Linear time slope, r_1	.31	.09	201	302.64**	.23	.05	201	280.30**
Level 1 error, e	.57	.32			.50	.25		

Note. $N = 213$. Significant effects appear in bold.
 ** $p < .01$. *** $p < .001$.

present models with peer-reported anxious solitude because they feature multi-informant assessment (peer, self). Results for self-reported anxious solitude can be obtained from the authors.

Self-Compassion Trajectories

The unconditional self-compassion model revealed that the mean trajectory of self-compassion was characterized by a moderate starting value (2.68 on a 1–5 scale, corresponding to value between 2 [*a little*] and 3 [*sometimes*]), a decrease from fifth to seventh grades, and a deceleration in this decrease over time (this resulted from the combination of a significant linear decrease and a significant quadratic increase in self-compassion over time; fixed effects, see Table 2). Most importantly, this model indicates significant individual variation in the intercept and linear slope of self-compassion from fifth to seventh grades (random effects), justifying the estimation of a conditional model to test predictors of this variation.

Self-compassion trajectories were predicted by time and the time-varying covariates peer-reported anxious solitude, representations of attachment security with both parents at Level 1, gender at Level 2, and all possible interactions. Gender was dropped from the model because no gender main or interaction effects emerged. Youth with secure attachment representations with both parents demonstrated high self-compassion relative to the mean trajectory. As expected, a significant Anxious Solitude \times Maternal Attachment Security \times Paternal Attachment Security \times Linear Time interaction emerged (Table 3).

Figure 1 illustrates the prototypical self-compassion trajectories of youth with high anxious solitude and secure or insecure representations of attachment security with mothers and fathers. Youth with low anxious solitude were not depicted in the graph in the interest of clarity of visual presentation, but graphs illustrating these effects can be obtained from the authors. Consistent with expectations, AS youth with dual secure attachments with mothers and fathers demonstrated the highest initial self-compassion relative to the mean in fifth grade, and maintenance of high levels of self-compassion over time relative to the mean (as indicated by significant contrasts relative to the mean trajectory in SAS PROC MIXED). As expected, youth high in anxious solitude with one secure attachment demonstrated intermediate self-compassion over time. Specifically, AS youth with insecure attachment with mothers and secure attachment with fathers exhibited moderately high self-compassion in fifth grade, which did not differ from the mean, followed by maintenance of moderately but significantly elevated self-compassion relative to the mean over time. Their counterparts with secure attachment with mothers and insecure attachment with fathers exhibited mean levels of self-compassion in fifth grade followed by a slight decrease in self-compassion over time relative to the mean trajectory, culminating in significantly less self-compassion than the mean. Finally, as expected, AS youth with dual insecure attachments with mothers and fathers tended to exhibit the lowest self-compassion in fifth grade. However, unexpectedly, they subsequently demonstrated a

Table 3
Conditional Self-Compassion Trajectories From Fifth Through Seventh Grades

Fixed effect	Coefficient	SE	df	t Ratio
Initial status, π_0				
Mean initial status, β_{00}	2.65	.06	212	43.47***
Linear time, π_1				
Mean linear change rate, β_{10}	-0.30	.13	212	-2.24*
Quadratic time, π_2				
Mean quadratic change rate, β_{20}	0.10	.06	21	1.58
Maternal security, π_3				
Mean initial status, β_{30}	0.14	.07	21	2.00[†]
Paternal security, π_4				
Mean initial status, β_{40}	0.18	.06	21	3.16**
AS (Peer), π_5				
Mean initial status, β_{50}	0.01	.05	21	0.29
Linear Time \times AS (Peer), π_6				
Mean linear change rate, β_{60}	0.03	.03	21	1.00
Linear Time \times Maternal Security, π_7				
Mean linear change rate, β_{70}	-0.04	.06	21	-0.61
Linear Time \times Paternal Security, π_8				
Mean linear change rate, β_{80}	-0.05	.06	21	-0.94
Maternal Security \times Paternal Security, π_9				
Mean initial status, β_{90}	0.01	.03	21	0.38
AS (Peer) \times Maternal Security, π_{10}				
Mean initial status, β_{100}	0.01	.08	21	0.14
AS (Peer) \times Paternal Security, π_{11}				
Mean initial status, β_{110}	0.03	.08	21	0.36
AS (Peer) \times Maternal Security \times Paternal Security, π_{12}				
Mean initial status, β_{120}	-0.05	.04	21	-1.21
Linear Time \times AS (Peer) \times Maternal Security, π_{13}				
Mean linear change rate, β_{130}	-0.02	.05	21	-0.47
Linear Time \times AS (Peer) \times Paternal Security, π_{14}				
Mean linear change rate, β_{140}	0.05	.05	21	0.85
Linear Time \times AS (Peer) \times Maternal Security \times Paternal Security, π_{15}				
Mean linear change rate, β_{150}	0.06	.03	21	2.33**
Random effect	SD	Variance	df	χ^2
Initial status, r_0	.52	.27	161	261.08***
Linear time slope, r_1	.24	.06	161	182.78
Level-1 error, e	.61	.37		

Note. $N = 213$. AS = anxious solitude. Significant effects appear in bold.

[†] $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

slight increase relative to the mean trajectory so that they approached mean levels of self-compassion by seventh grade. Nonetheless, follow-up contrasts indicated that they demonstrated significantly less self-compassion relative to prototypical AS youth with all other attachment combinations in 6th grade, and marginally less in 7th grade.

Self-Criticism Trajectories

The unconditional model revealed a modest starting value (1.91 on a 1–5 scale, a value between 1 [*almost never*] and 2 [*a little*]) and stability in mean levels of self-criticism over time (i.e., no significant mean linear or quadratic pattern of change over time, fixed effects, see Table 2). Most importantly, the unconditional model revealed significant individual variation in the intercept and linear slope of self-criticism from fifth through seventh grades (random effects). Therefore, conditional models were computed to test anxious solitude and attachment security with mothers and fathers as predictors of individual variation in self-criticism trajectories.

Initially, self-criticism trajectories were predicted by peer-reported anxious solitude, representations of attachment security with mothers and fathers, gender, and all higher order interaction terms. Gender was dropped from the model due to nonsignificant main and interaction effects. Consistent with the previous model, a significant Peer-Reported Anxious Solitude \times Maternal Attachment Security \times Paternal Attachment Security \times Linear Time interaction emerged (see Table 4).

Figure 2 illustrates the prototypical self-criticism trajectories of youth with high anxious solitude and secure versus insecure attachment with mothers and fathers. As with the self-compassion model, youth with low anxious solitude were not depicted in the graph in the interest of visual clarity. As expected, youth with high anxious solitude and dual insecure attachment with mothers and fathers exhibited initial significant elevation (and significantly more self-criticism relative to prototypical AS youth with all other attachment combinations in 5th grade in follow-up contrasts) and increasing self-criticism over time relative to the mean trajectory (and marginally more self-criticism than prototypical AS youth with all other attachment combinations in follow-up contrasts). In contrast, prototypical trajectories for all other youth approached the mean over time. AS youth with insecure attachment with mothers and secure attachment with fathers also tended to exhibit

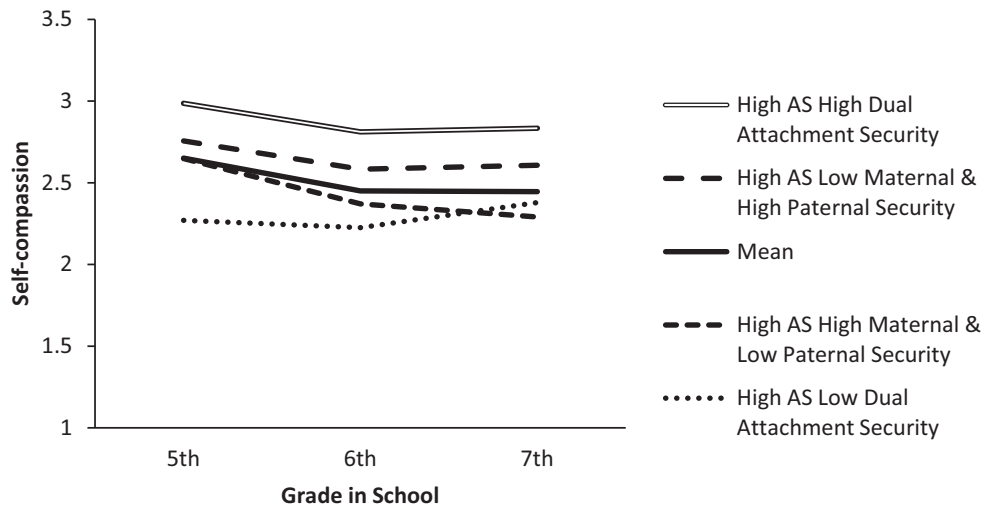


Figure 1. Youths' representations of attachment security with their mothers and fathers moderate the relation between their peer-reported anxious solitude and self-compassion trajectories from fifth to seventh grades.

elevated self-criticism in fifth grade relative to the mean but decreased self-criticism over time such that they approached mean levels by seventh grade. AS youth with secure maternal and insecure paternal attachments exhibited a similar pattern. Finally, consistent with expectations, AS youth with dual secure attachments with both mothers and fathers exhibited significantly less self-criticism in fifth grade relative to the mean. They subsequently demonstrated a slight increase in self-criticism over time such that they approached the mean in seventh grade.

Discussion

Results indicate that AS youth displayed substantial heterogeneity in self-compassion and self-criticism trajectories across early adolescence and that these patterns were systematically moderated by the security of their attachment representations with their mothers and fathers. As hypothesized, self-process trajectories were lawfully related to multiple attachment representations. Relative to the mean trajectory, dual secure attachment representations predicted the maintenance of highly adaptive self-processes over time, single secure attachment representations predicted intermediately adaptive self-processes and maintenance or improvement over time, and dual insecure attachment representations predicted maladaptive self-processes and increasing self-criticism over time. This pattern of findings makes a substantial contribution to extant literature by elucidating the role of foundational

interpersonal and social cognitive processes (i.e., youths' representations of parent-child attachment security) in the origin and continuity and change in youths' self-processes over the course of early adolescence.

Attachment Moderates Self-Process Trajectories in Anxious Solitary Youth

According to attachment theory, youth construct a cognitive "working model" of interpersonal relationships based on their foundational relationships with their parents (Ainsworth, 1979; Bowlby, 1969). This working model not only guides youths' expectations of others in relationships but also their self-views (Bowlby, 1973; Cassidy, 1988). The influence of the working model should be especially apparent in times of distress because the purpose of attachment is to provide comfort and reassurance to youth during distress. Consequently, when youth experience distress or their self-views are threatened by poor performance, their working model appears to be activated and influence how they treat themselves.

Consistent with this theoretical framework, current findings indicate that when AS youth encountered personal challenges, secure attachment representations supported the maintenance of self-compassion and protected against self-criticism, whereas less secure attachment representations undermined self-compassion and contributed to elevated and increasing levels of self-criticism over time. Consequently, AS youth with dual insecure attachments demonstrated a pattern of self-criticism

Table 4
Conditional Self-Criticism Trajectories From Fifth Through Seventh Grades

Fixed effect	Coefficient	SE	df	t-Ratio
Initial status, π_0				
Mean initial status, β_{00}	1.93	.05	212	36.46***
Linear time, π_1				
Mean linear change rate, β_{10}	-0.14	.11	212	-1.35
Quadratic time, π_2				
Mean quadratic change rate, β_{20}	0.05	.05	21	0.91
Maternal security, π_3				
Mean initial status, β_{30}	-0.07	.05	21	-1.59
Paternal security, π_4				
Mean initial status, β_{40}	0.02	.04	21	0.33
AS (Peer), π_5				
Mean initial status, β_{50}	0.05	.05	21	1.01
Linear Time \times AS (Peer), π_6				
Mean linear change rate, β_{60}	0.02	.03	21	0.69
Linear Time \times Maternal Security, π_7				
Mean linear change rate, β_{70}	-0.03	.05	21	-0.60
Linear Time \times Paternal Security, π_8				
Mean linear change rate, β_{80}	0.01	.06	21	0.16
Maternal Security \times Paternal Security, π_9				
Mean initial status, β_{90}	-0.04	.04	21	-1.16
AS (Peer) \times Maternal Security, π_{10}				
Mean initial status, β_{100}	-0.01	.07	21	-0.18
AS (Peer) \times Paternal Security, π_{11}				
Mean initial status, β_{110}	-0.05	.06	21	-0.91
AS (Peer) \times Maternal Security \times Paternal Security, π_{12}				
Mean initial status, β_{120}	-0.04	.04	21	-0.82
Linear Time \times AS (Peer) \times Maternal Security, π_{13}				
Mean linear change rate, β_{130}	0.04	.04	21	0.87
Linear Time \times AS (Peer) \times Paternal Security, π_{14}				
Mean linear change rate, β_{140}	-0.02	.05	21	-0.41
Linear Time \times AS (Peer) \times Maternal Security \times Paternal Security, π_{15}				
Mean linear change rate, β_{150}	0.07	.02	21	4.10***
Random effect	SD	Variance	df	χ^2
Initial status, r_0	.51	.26	161	330.72***
Linear time slope, r_1	.23	.05	161	201.85**
Level-1 error, e	.50	.25		

Note. $N = 213$. AS = anxious solitude.

** $p < .01$. *** $p < .001$.

that increasingly diverged from other youth over time, such that they demonstrated not only initial elevation in self-criticism in fifth grade but increasing self-criticism over the next 2 years. In contrast, other AS youth demonstrated convergence with mean patterns of self-criticism by seventh grade, or in other words, normalization over time.

AS youth with dual insecure attachments also demonstrated the lowest initial self-compassion as expected but unexpectedly approached mean levels of self-compassion by seventh grade. Other AS youth demonstrated the expected ordering with regard to self-compassion, with AS youth with dual secure attachments showing the highest initial levels, AS youth with one secure attachment demonstrating intermediate initial levels, and a predominant pattern of maintenance of these levels relative to the mean trajectory over time. Although we did not expect that AS youth with dual insecure attachments would "catch up" to other youth in self-compassion over time, such patterns might result if friendships serve as compensatory support in early adolescence. However, it is unclear why AS youth demonstrated improved adjustment with regard to self-compassion but not self-criticism. Nonetheless, this mixed pattern of change in adjustment is reminiscent of findings indicating that youth who experience support from peers but not parents are not as well-adjusted as youth with parent support (DuBois et al., 2002).

Elevated and increasing self-criticism over time is concerning as it is robustly related to internalizing problems. Consequently, present results suggest that AS youth with dual insecure attachments are at particular risk for internalizing problems. Indeed, recent evidence suggests self-criticism contributes to AS youths' depressive symptoms, whereas self-compassion acts as a buffer (Peter & Gazelle, 2016). Identifying these self-processes as risk or protective factors in AS youth is important because they are at risk for internalizing problems throughout development (Gazelle & Ladd, 2003; Gazelle & Rudolph, 2004), including clinically significant anxiety and mood disorders (Gazelle, Workman, & Allan, 2010).

Moreover, early adolescence is a period in which youth are beginning to establish their identities. Consequently, maladaptive self-processes may threaten the achievement of adolescent and adult developmental milestones. Indeed, evidence indicates that childhood shyness can subsequently interfere with undertaking a higher education, and delay marriage and the establishment of a stable

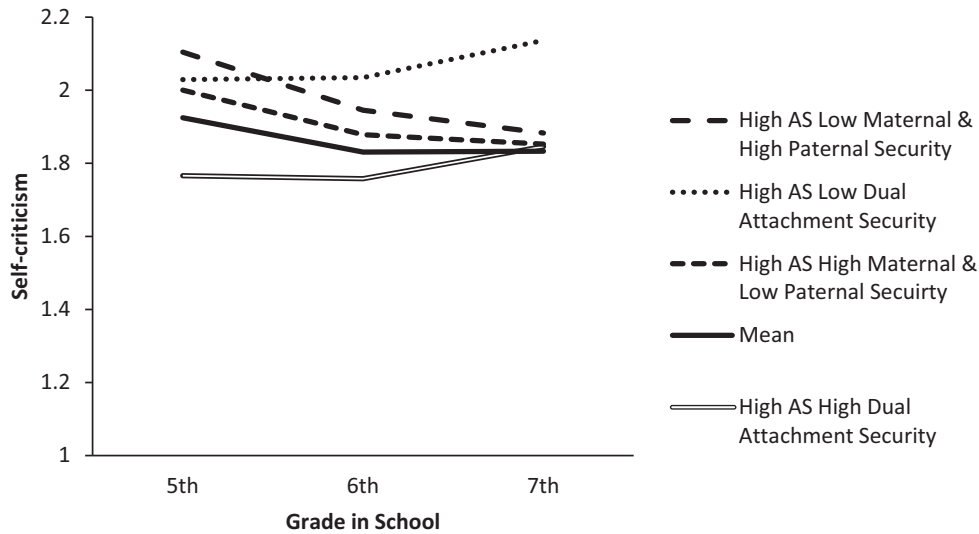


Figure 2. Youths' representations of attachment security with their mothers and fathers moderate the relation between their peer-reported anxious solitude and self-criticism trajectories from fifth to seventh grades.

career (Caspi, Elder, & Bem, 1988). We would expect interference with such developmental milestones to be especially likely for AS youth with insecure attachment histories.

Strengths and Limitations

This investigation benefits from multiple strengths, including expanding knowledge about self-compassion to a wider developmental age range, and employing strong developmental design, methods, and analyses well suited to capturing continuity and change in development over time. This is one of two studies to examine the longitudinal effects of self-compassion in a youth sample (Marshall et al., 2015). As such, current findings not only demonstrate that self-compassion is a phenomenon relevant to the early adolescence, but also establish systematic relations between youths' self-compassion and their foundational relationships with parents over time. Moreover, because the current investigation captured temporal patterns, including patterns of normalization and increasing difficulty over time, we can be more confident in interpreting direction of effects relative to previous investigations conducted at single time points (Neff & McGehee, 2010). Nonetheless, more detailed examination of direction of effects between AS and attachment security and their impact of self-processes, which are likely to be bidirectional, could be achieved via correlated growth parameters or cross-lagged models. The strength of findings is also increased by employing multiple informants—

both peer and self-reports. This increases confidence that the pattern of findings is not just the reflection of youths' self-theories or shared method variance but involves behavioral patterns observable to peers.

Nonetheless, we acknowledge limitations to conclusions from the present investigation. Although we do not have a conceptual basis for expecting the present patterns to be culturally specific, and similar attachment patterns have been shown across many cultural contexts (Waters & Cummings, 2000), the cultural generalizability of these patterns beyond the United States has not been demonstrated. Although early adolescence is an important period of early identity development, attachment processes occurring in early childhood likely set the stage for the patterns observed in this period. Attachment researchers acknowledge that change in attachment security is possible throughout childhood (Belsky & Fearon, 2002) and highlight the influence of attachment on adjustment throughout development. Consistent with this perspective, follow-up research in mid to late adolescence is needed on the link between anxious solitude, attachment and identity, as the processes documented here represent early steps in a long process of self-construction and identity formation.

Future Directions and Conclusion

We acknowledge that, although we analyze heterogeneity among AS youth by testing moderation, we do so with a variable-oriented analytic

approach. In the future it would be worthwhile to examine how combinations of characteristics (e.g., anxious solitude, attachment security with each parent) combine in fine-grained subgroups of youth in a person-oriented approach. Person-oriented approaches have the advantage of describing how whole youth systems operate and identify commonalities in systems that share particular combinations of characteristics (Magnusson & Stattin, 2006). Nonetheless, present results provide valuable insights into how anxious solitude and representations of attachment security with mothers and fathers interact with each other to predict youths' self-processes.

In addition to parent-child relationships, other interpersonal relationships and interactions, such as friendships and peer experiences, could impact self-compassion and self-criticism trajectories in early adolescence. Investigating these interpersonal factors provides interesting avenues for further research.

The present findings provide evidence for the systematic longitudinal impact of youths' representations of attachment security with their parents on their self-processes. In turn, self-processes likely contribute to AS youths' vulnerability to internalizing problems and delayed attainment of adult developmental milestones. This suggests that interventions targeting parent-adolescent relationships or youth self-processes directly could improve the emotional health and life course adjustment of AS youth.

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